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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,305	11/30/2001	Michael R. Sogard	PA0244US/11269.27	8919

7590 11/04/2003

The Law Office of Steven G. Roeder
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EXAMINER	
GURZO, PAUL M	

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/000,305	SOGARD, MICHAEL R.	
	Examiner	Art Unit	
	Paul Gurzo	2881	

-- Th MAILING DATE of this communication appears on the cover sh t with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-91* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,12-24,28-40,44-51,55-59,62-70,73-79,81-86 and 89-91* is/are rejected.

7)☒ Claim(s) *9-11,25-27,41-43,52-54,60,61,71,72,80,87 and 88* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8, 12-24, 28-40, 44-51, 55-59, 62-70, 73-79, 81-86, and 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al (722), and further in view of Shamouilian et al. (358) or Fu (576).

Regarding claims 1, 16-18, 32-34, 45-47, and 56-58, 722 teaches an optical assembly (col. 1, lines 14-17 and col. 3, lines 43-49), a gap near the optical assembly, a stage (4) that is located in the gap, and a mover assembly (14) that moves the stage in the gap (col. 4, lines 4-42 and Fig. 3). 722 also teaches that the motor is enclosed in a magnetic shield means to have the electron beam be free from the magnetic fields in order to prevent the magnetic fields from affecting the electron beam. This makes it possible to perform the desired recording of information with high accuracy (col. 2, line 65 - col. 3, line 2). This magnetic shield works in much the same way as a magnetic shunt in that it provides a path to direct the magnetic field from the gap (See Fig. 4).

722 does not explicitly mention the use of such a magnetic shunt, but 358 and 576 teach a magnetic shunt that attracts the magnetic flux, causing depletion of the magnetic flux above those portions of the substrate, and provides an alternate path for the flux (See 358, col. 4, lines 25-33 and 576, col. 4, lines 48-53). They both teach this magnetic shunt used in conjunction

with semiconductor fabrication (See 358, col. 1, line 9, and 576, col. 1, lines 12-18). 358 also teaches the magnetic shunt comprises ferromagnetic material (col. 4, lines 29-32), which has the same qualities as a magnetic permeable material. Therefore, it would have been obvious to one of ordinary skill in the are at the time the invention was made to include a magnetic shield as the magnetic shield means taught by 722 because the magnetic shield means and the magnetic shunt work in the same way because both direct the magnetic field away from the substrate resulting in a more uniform processing with higher accuracy.

Regarding claims 59, 64, 76, 79, and 82, the above-applied prior art teaches the a stage assembly for moving a device including an optical assembly and a gap near an optical assembly comprising a stage, a mover assembly that moves the stage and generates a magnetic field, and a first magnetic shunt positioned near the stage and made from a magnetically permeable material and redirects the magnetic field away from the gap as stated above. Further, 358 depicts a fixed magnetic shunt (34) that is contiguous to the base (22) (Fig. 1).

Regarding claims 2-8, 19-24, 35-40, 48-51, 62-63, 65-68, 81, and 83-86 all of the prior art is concerned with redirecting the magnetic field as taught above and will obviously redirect the claimed percentage. Further, the positioning and design of the magnetic shunt is considered obvious to the prior art because the applicant has provided no evidence that differing designs will redirect in a more efficient manner.

Regarding claims 12-15, 28-31, 55, 73-75, and 89-91, Kojima et al. depict in Fig. 3 and 4 and wall (11) that has a magnetic redirect means positioned on it, and well as an illumination source (1). Further, 358 teaches a magnetic shunt (34) that is coupled to a container that is

positioned along a wall (74) (Fig. 2c). This shunt is capable of not moving relative to the optical assembly and of being secured in the desired manner.

Regarding claim 44, it is well known in the art that an exposure apparatus works by illuminating a first object (mask) to form an image on a second material (reticle). Both objects must be positioned in a manner that they are in a gap in the beam so that the beam will efficiently etch.

Regarding claims 69-70 and 77-78, it is obvious that the longitudinal axis is perpendicular to the first axis because this axis is horizontal as depicted in the prior art, and it is a mere design choice to orient the magnetic shunt in the appropriate direction.

Allowable Subject Matter

Claims 9-11, 25-27, 41-43, 52-54, 60-61, 71-72, 80, and 87-88 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed August 18, 2003 have been fully considered but they are not persuasive. Applicant argues that the prior art is non-analogous, that the Kojima reference has no fear of magnetic fields, and that several of the dependent claims are not taught.

Regarding the argument that the prior art is non-analogous, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, all of the prior art is concerned with reducing the

adverse effects that the magnetic field has on the working order of the apparatus (722 Abstract, 358 col. 2, lines 38-42, and 576, col. 4, lines 38-59). The instant application is concerned with reducing magnetic field effects, so combining prior art that is also concerned with this is seen as analogous and reasonably pertinent to the particular problem with which the applicant was concerned.

Regarding the argument that the Kojima reference has no fear of magnetic fields, the Examiner points to col. 4, lines 38-42. As sighted by the Applicant in the response, there is no fear of magnetic fields, but this is due to the magnetic casing (13). Therefore, the adverse effect of magnetic fields was feared, and a magnetic casing was used to eliminate that fear of magnetic fields. This is much the same as the instant application, in that magnetic fields are not wanted because of adverse effects. Therefore, a shunt is used. Both the prior art and the instant application saw a need to reduce adverse fields, and both have done so. Similarly, the secondary references also reduce magnetic fields and can be properly combined as stated above.

Regarding the argument that several of the dependent claims are not taught, the specification lacks any teaching as to how using a tubular shaped first magnetic shunt achieves any new or unexpected results. It also lacks any teaching of why this design is desirable. Therefore, because there is no teaching to substantiate the importance or desire for such a shape, the Examiner maintains that there is no inventive step and this shape is an obvious extension of the prior art. Further, claiming a redirection at least approximately 10 or 50 percent is extremely vague and does not adequately define any value or range of values.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
October 28, 2003

JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800